

FIRE FACT NO. 055 CHECKLIST(s) : 06

TITLE : REQUIREMENTS FOR LP-GAS INSTALLATIONS BELOW GRADE

CHECKLIST ITEM(s) : 06-28

REFERENCE(s) : K.S.A. 31-133(a)

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Liquefied petroleum gas (LP gas) is heavier than air, a characteristic that makes below-grade installations particularly hazardous. LP gas leaking from piping or equipment will collect in low places and may eventually be ignited. The following protective measures are designed to mitigate this explosion hazard. These engineering measures are the minimum requirements to lower the risk of explosion to a level acceptable by the Kansas State Fire Marshal.

Although the best mitigation measure is to **remove the LP from below grade**, facility owners and operators should research the financial differences between moving the installation and providing these protective measures before acting on a decision.

PROTECTIVE MEASURES:

- No obvious ignition sources within eighteen (18) inches of the floor.
- Detection equipment designed and installed to detect LP at the lowest level.
- The detection instrument shall alarm at 10% Lower Explosive Limit (LEL) and on alarm shall:
 - Actuate an alarm to alert facility personnel.
 - Actuate an automatic fail-safe fuel shut off valve that closes when there is a problem.
 - Actuate a non-sparking exhaust fan designed and installed to pick up vapor/gas from the lowest level.
 - The system shall require a manual reset.
 - The system shall be maintained according to manufacturer's directions.

These pieces of equipment are similar to those commonly found in flammable liquid storage rooms. The installation shall be approved by the Kansas State Fire Marshal Office before installation or completion. Check with your LP gas supplier to locate or purchase this type of equipment.

